ABSTRACT

Limitations of government funding in infrastructure development, including development of Water Supply Systems in Indonesia encouraged the implementation of the Public Private Partnership (PPP) projects. Concession period is very important for the parties to cooperate in PPP projects, so that the concession determination have to meet the win-win principle and create a mutually beneficial condition.

The purpose of this study was to obtain an optimal concession period for the parties working together through the development of the concession model PPP projects. Stochastic model was developed to capture the presence of risk factors and uncertainties in the project. The design of factorial experiments are used as a tool to test the influence of factors on the concession period determination. Simulation model constructed using Montecarlo simulation technique based on an Excel spreadsheet.

Concession period that meets win-win principle, was obtained by minimizing the difference in the value of project performance from perspective both of private and project owner. Scripted testing of factors that give results, that the financing of factors influence the determination of the concession period. While differences in risk perception of the cooperating parties do not affect the determination of the concession period. Results of simulations based on optimization show that the optimal concession period obtained on the condition of financing using a combination of debt and equity, where the value $p = 0.1$. In this condition, concession period would be obtained by private sector is over 21.66 years.

Keywords : public private partnership; concession; modelling